CANCER SCIENCE INSTITUTE OF SINGAPORE

IN THE SPOTLIGHT

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What's New?

Congratulations to CSI Director, Prof. Ashok on this honour!

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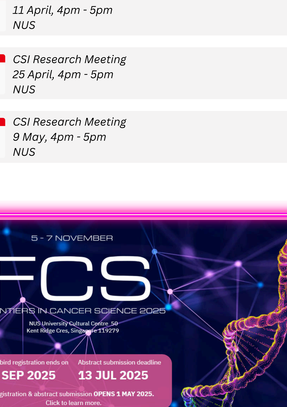

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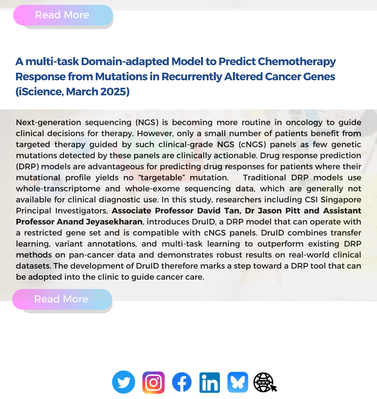
Upcoming Events

11 *CSI Townhall*
11 April, 4pm - 5pm
NUS

25 *CSI Research Meeting*
25 April, 4pm - 5pm
NUS

09 *CSI Research Meeting*
9 May, 4pm - 5pm
NUS



Research Highlights

Pembrolizumab With or Without Bevacizumab in Platinum-Resistant Recurrent or Metastatic Nasopharyngeal Carcinoma: A Randomized, Open-Label, Phase 2 Trial (The Lancet Oncology, February 2025)

A recent Phase II clinical trial led by **Professor Goh Boon Cher**, a Senior Principal Investigator at CSI Singapore, has demonstrated the promising efficacy of combining bevacizumab (a VEGF inhibitor) and pembrolizumab (a PD-1 inhibitor) in patients with platinum-resistant recurrent or metastatic nasopharyngeal carcinoma (NPC). Published in The Lancet Oncology, the study found that one-third of patients who previously did not respond to pembrolizumab alone showed clinical improvement following the addition of bevacizumab. Notably, this combination therapy was well-tolerated with no serious adverse events or treatment-related fatalities. To our knowledge, this trial represents the first randomized controlled study to assess the synergistic effect of anti-angiogenic and anti-PD-1 therapies in NPC in the world. The findings suggest that this combination may enhance immune response offering a potential new therapeutic strategy for NPC. This could pave the way for incorporating combination therapy into standard treatment regimens for NPC, potentially improving patient outcomes and complementing existing therapies like chemotherapy and radiotherapy.

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The ADAR1-Regulated Cytoplasmic dsRNA-Sensing Pathway is a Novel Mechanism of Lenalidomide Resistance in Multiple Myeloma (Blood, March 2025)

Multiple myeloma (MM) is a type of cancer that affects plasma cells in the bone marrow. While standard-of-care treatment like lenalidomide, an immunomodulatory drug (IMiD), has improved survival rates for many MM patients, a significant number still experience relapse due to the development of drug resistance. A new study led by Dr. Teoh Phaik Ju and Dr. Koh Mun Yee, together with **Professor Chng Wee Joo** and **Associate Professor Polly Chen** from the Cancer Science Institute of Singapore (CSI Singapore) has uncovered a key mechanism behind lenalidomide resistance in MM, offering new insights into potential strategies for improving treatment outcomes and overcoming drug resistance. The team identified a gene called ADAR1, which encodes an RNA editing enzyme, as a key factor in in supressing the immune response triggered by lenalidomide, that is important to kill MM cells.

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A multi-task Domain-adapted Model to Predict Chemotherapy Response from Mutations in Recurrently Altered Cancer Genes (iScience, March 2025)

Next-generation sequencing (NGS) is becoming more routine in oncology to guide clinical decisions for therapy. However, only a small number of patients benefit from targeted therapy guided by such clinical-grade NGS (cNGS) panels as few genetic mutations detected by these panels are clinically actionable. Drug response prediction (DRP) models are advantageous for predicting drug responses for patients where their mutational profile yields no "targetable" mutation. Traditional DRP models use whole-transcriptome and whole-exome sequencing data, which are generally not available for clinical diagnostic use. In this study, researchers including CSI Singapore Principal Investigators, **Associate Professor David Tan, Dr Jason Pitt and Assistant Professor Anand Jeyasekharan**, introduces DruID, a DRP model that can operate with a restricted gene set and is compatible with cNGS panels. DruID combines transfer learning, variant annotations, and multi-task learning to outperform existing DRP methods on pan-cancer data and demonstrates robust results on real-world clinical datasets. The development of DruID therefore marks a step toward a DRP tool that can be adopted into the clinic to guide cancer care.

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